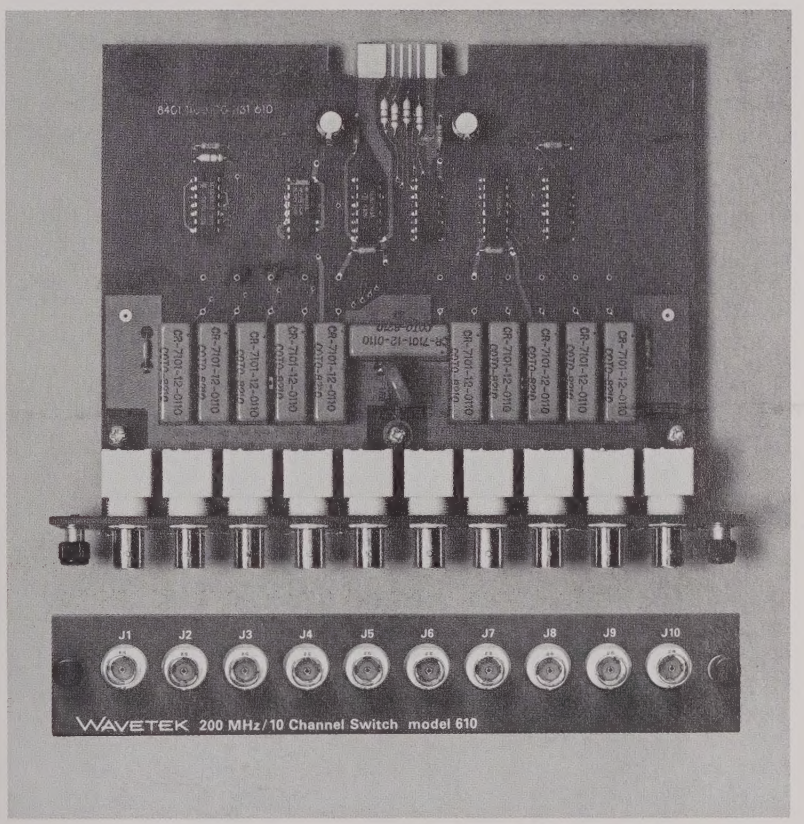
INSTRUCTION MANUAL
MODEL 610
200 MHz, 10 CHANNEL MODULE

Model 610, a 200 MHz RF module, gives maximum flexibility with two sets of five relays in a modified star. Any I/O connector can be connected to any other or to multiple I/O connectors; all can be disconnected as well. The two groups of five relays can be connected together via another relay.



SPECIFICATIONS

Insertion Loss ≤0.75 db @ 100 MHz.
Bandwidth ≥200 MHz @ −3 dB.
Cross Talk Any channel to any channel; all switches open:

10 MHz	100 MHz	200 MHz
≤ −75 dB	≤ −55 dB	≤ −50 dB

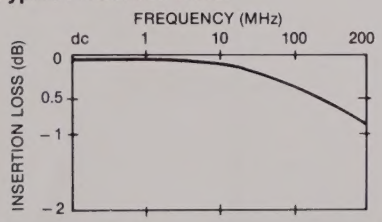
Isolation One signal path, input to output; one switch open:

10 MHz	100 MHz	200 MHz
≤ −55 dB	≤ −40 dB	≤ −35 dB

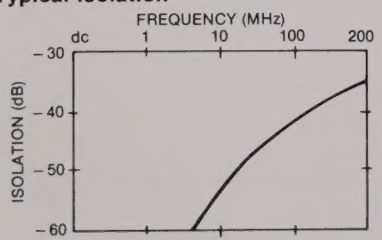
Risetime ≤2.0 ns.
Maximum V/A/W 200V, 0.5A 10W.
Contact Resistance ≤0.15Ω/sw.
VSWR (Typical) ≤1.1:1 @ 25 MHz,
≤1.2:1 @ 95 MHz.
Switching Time ≤2 ms.
I/O Connections 10 BNC, female.
Power Consumption
1.0 W max @ 12V;
0.1 W per switch.

SUPPLEMENTAL INFORMATION

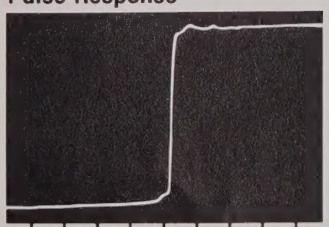
Typical Insertion Loss



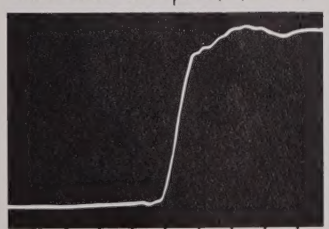
Typical Isolation



Typical Sub-nanosecond Pulse Response

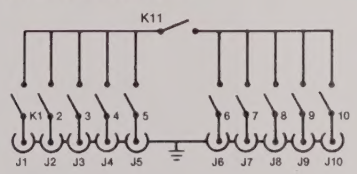


INPUT WAVEFORM T_r = 200ps (1 ns/DIV)



OUTPUT WAVEFORM (1 ns/DIV)

SWITCH DIAGRAM



Specifications subject to change.

WAVETEK®
WAVETEK SAN DIEGO, INC.
9045 Balboa Ave., San Diego, CA 92123
P. O. Box 85265, San Diego, CA 92138
Tel 619/279-2200 TWX 910/335-2007
P11/83 S11/83

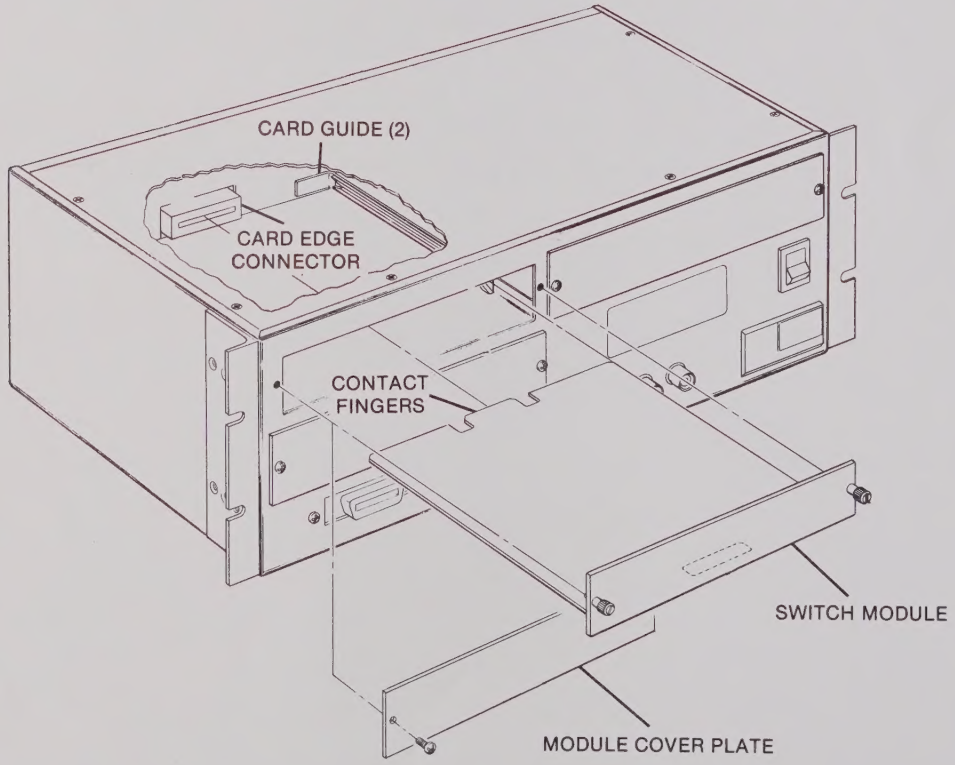
INSTALLATION AND USE

The Model 610 switch module can be installed into any available module slot within the 601 chassis or 602 expansion chassis. To install the module, refer to the installation figure and the following procedure.

1. Turn the 601 power off.
2. Remove the two screws and the module cover plate.
3. Insert the switch module into the card guides (both sides) and push the moduleinto the chassis. The contact fingers on the switch module printed circuit board must engage the card edge connector in the chassis.
4. Fasten the two captive screws on the switch module.

Once installed, the 610 module provides a 9-bit code that identifies the model number of the module and the number of relays in the module. This code along with the module's slot number is stored in the 601's memory during the power-up routine.

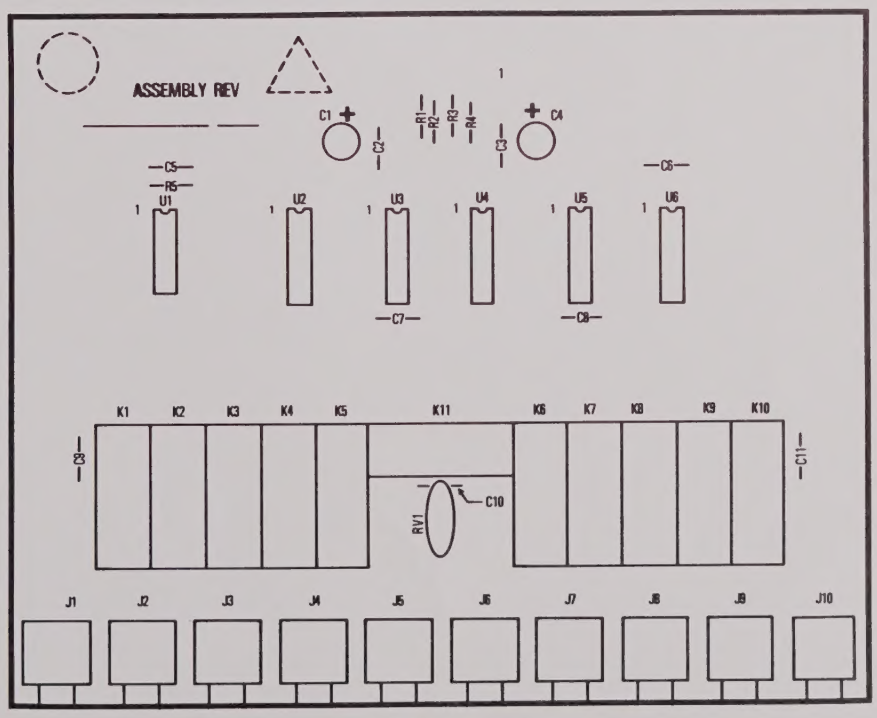
For specific programming information, refer to Section 3 of the Model 600 manual. See the switch diagram on page 1 for relay configuration and signal connections. Signal connections are made using the ten BNC connectors located on the module faceplate.

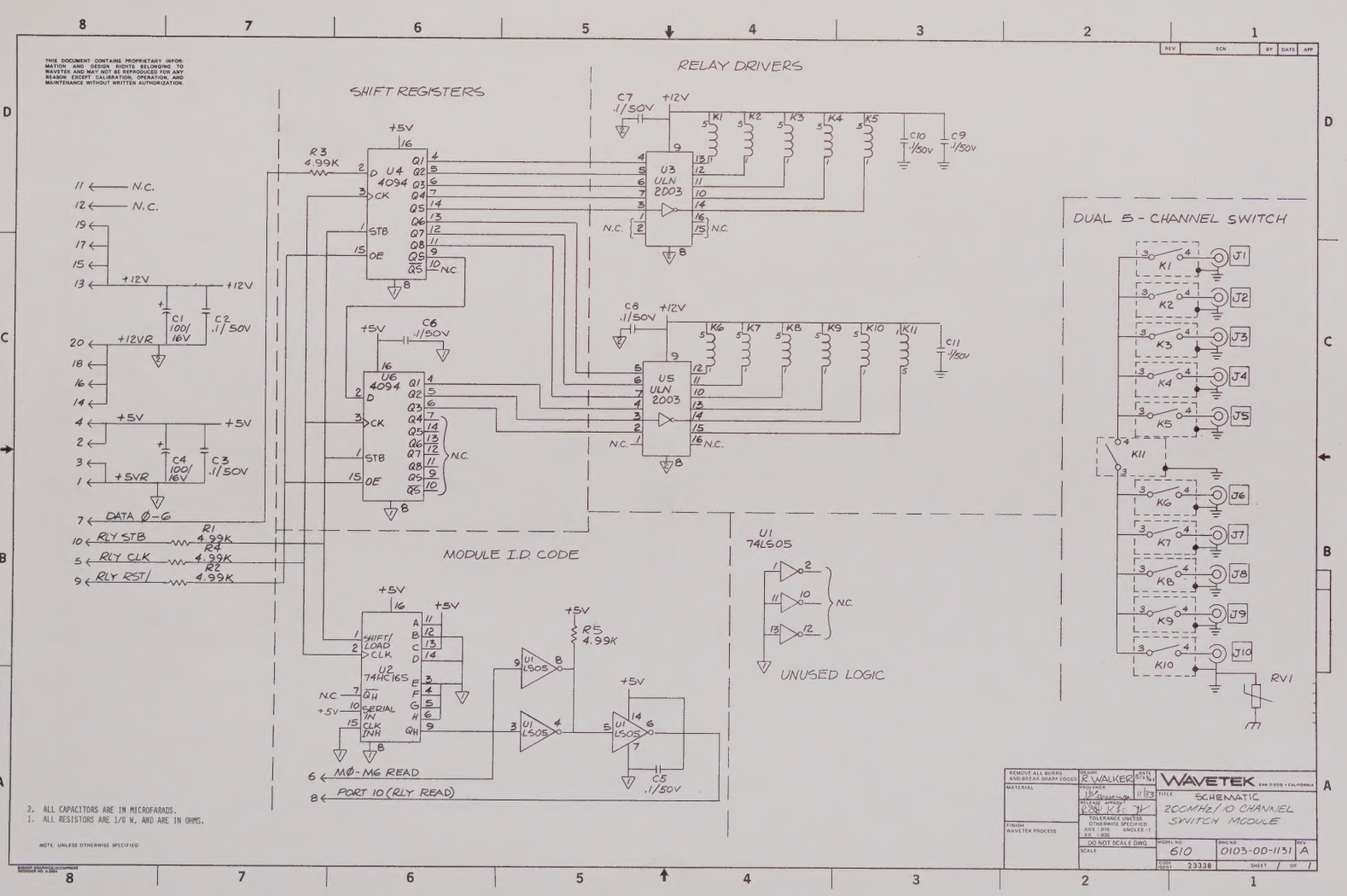


Installation Drawing

REFERENCE DESIGNATORS	PART DESCRIPTION	ORIG-MFGR-PART-NO	MFGR	WAVETEK NO.	QTY/PT
1	FACE PLATE, MODULE REF: 3200-06-0035	1400-01-6800	WVTK	1400-01-6800	1
C10 C11 C2 C3 C5 C6 C7 C8 C9	CAP, CER, MON, .1MF, 50V	CAC03Z5U104Z050A	CORNG	1500-01-0405	9
C1 C4	CAP, ELECT, 100MF, 25V RADIAL LEAD, SP .20	CRE SERIES 100/25	CAPAR	1500-31-0102	2
3	200MHZ/10 CHANNEL BD	1700-00-1131	WVTK	1700-00-1131	1
J1 J10 J2 J3 J4 J5 J6 J7 J8 J9	CONNECTOR, BNC(PC)	227161-1	AMP	2100-01-0019	10
K1 K10 K11 K2 K3 K4 K5 K6 K7 K8 K9	RELAY, REED	CR-7101-12-0110	COTO	4500-00-0020	11
R1 R2 R3 R4 R5	RES, MF, 1/8W, 1%, 4.99K	RN55D-4991F	TRW	4701-03-4991	5
RV1	VARISTOR	V56ZA8	GE	4799-00-0048	1
U3 U5	IC	ULN2003A	SPRAG	7000-20-0300	2
U4 U6	IC	CD4094BE	RCA	8000-40-9400	2
U1	IC	74LS05	TI	8000-74-0510	1
U2	IC, SHIFT REGISTER	74HC165	MOT	8007-41-6540	1

WAVETEK PARTS LIST	TITLE PCA, 200MHZ/10 CH SWITCH MODULE	ASSEMBLY NO. 1100-00-1131	REV B




THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND DESIGN RIGHTS BELONGING TO WAVETEK AND MAY NOT BE REPRODUCED FOR ANY REASON EXCEPT CALIBRATION, OPERATION, AND MAINTENANCE WITHOUT WRITTEN AUTHORIZATION.
SHIFT REGISTERS
RELAY DRIVERS
DUAL 5-CHANNEL SWITCH
MODULE I.D. CODE
UNUSED LOGIC
U4 4094
U6 4094
U3 ULN 2003
U5 ULN 2003
U2 74HC165
U1 74LS05
+5V
+12V
DATA Ø-6
RLY STB
RLY CLK
RLY RST/
MØ-MG READ
PORT 10 (RLY READ)
SHIFT/LOAD CLK
SERIAL IN
CLK INH
N.C.
RV1
2. ALL CAPACITORS ARE IN MICROFARADS.
1. ALL RESISTORS ARE 1/8 W, AND ARE IN OHMS.
NOTE: UNLESS OTHERWISE SPECIFIED
WAVETEK SAN DIEGO, CALIFORNIA
SCHEMATIC
200MHz/10 CHANNEL SWITCH MODULE
MODEL NO. 610
DWG NO. 0103-00-1131
REV A
SIZE D
CODE IDENT 23338
SHEET 1 OF 1

93294